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supply the vacuum caused by the action of the pump. But if there should be no danger of raising the lees, the flow of wine may be made strictly to correspond with the action of the pump by closing the cock of the tube *o*, in which case the vacuum caused in *n* must be entirely supplied by a proportionably rapid current from the cask *l*.

No. XVIII.

FILTER FOR OIL.

The following Notice respecting a proposed Filter for Oil was communicated by J. Robison, Esq. of Edinburgh; to whom the Thanks of the Society were voted for the same.

I BEG leave to mention to you an idea which occurred to me a few days ago, when I happened to witness the difficulties and waste which take place in filtering and clearing oil from its dregs, in which operation, as it appears to be conducted, a great deal of the advantage which is gained by repose and subsidence is again lost in drawing off the oil to pass it through the filter. It appears to me, that by introducing water through a regulated aperture, and from a height sufficient to give the requisite hydrostatic pressure, into the bottom of a butt of oil, and making a communication from the top of the butt to a filter, acting *per ascensum*, all the advantages arising from repose and subsidence would be retained; and by adapting the nature of the filter to the quality of the oil, the contents of any butt might be easily and quickly separated into three or four portions of different degrees of value. Perhaps some arrangement like the following might answer the purpose.

J. Robison.

Plate IV. fig. 10. *q* is a cistern of water which communicates by the pipe *r* with the bottom of the butt of oil *p; w* is the filter, raised on feet, and standing on the heading of the butt, with which it communicates by the pipe *s; v* is a perforated plate above the lower chamber of the filter, and *y* is its discharging cock; *t* is the middle chamber filled with charcoal or any other suitable substance. The partition between this and the upper chamber *u* is a perforated plate, and *x* is the discharging pipe of that chamber.

The butt containing the oil being connected with the apparatus already described, the cock of the pipe *r* is to be turned, which will allow the water to flow into the butt. At the same time, the cock of the pipe *s* being opened, the upper part of the oil, and therefore the purest, first flows into and fills the lower chamber of the filter, and is followed by the less pure portions, according to their respective specific gravity: but as the pipe enters this chamber at the top, those impurities that are considerably heavier than the oil will subside to the bottom, and are from time to time to be discharged through the cock. The rest of the oil rises through the perforated plate, is separated from the lighter impurities by the charcoal or sand in the middle chamber, and then passes through the upper plate into the top chamber, whence it flows through the cock *x*.

The two perforated plates must rest on rings or projecting ledges, that the charcoal may be renewed, and the lower plate may be taken out occasionally and cleared from the dregs which otherwise would stop up its holes.

No. XIX.

FIRE ESCAPE.

The large SILVER MEDAL *was presented to Mr.* DAVID DAVIES, 15, *Wigmore Street, Cavendish Square, for his Fire Escape; a Model of which has been placed in the Society's Repository.*

THE Society have already published several machines or contrivances to enable the inmates of a house on fire to escape from the upper stories, in which the bed-rooms are generally placed. The machine invented by Mr. Davies is remarkable for its simplicity and for bringing into action a principle that hitherto has not been applied to this purpose. It has not yet been used in any actual case of fire, but the machine has been made full size; and, from the result of trials made with it at the Society's premises and elsewhere, it is evidently capable of enabling persons to descend unhurt from the upper story of a high house. The proposal of the inventor is, that it should be used from within; but so few houses, comparatively speaking, are burnt down, that hardly any person would be at the trouble and expense even of the simplest means of rescuing himself and family from a destruction, of which